

## REMARKS

The Office Action mailed February 25, 2005 has been received and reviewed. Claims 1-30 are in the case. Claims 1, 2, 8, 10, and 12-16 are objected to for various asserted informalities. Claims 1-4, 8-20, and 29 stand rejected under 35 U.S.C. §112, first paragraph. Claims 1-30 stand rejected under 35 U.S.C. §101. Claims 1-30 stand rejected under 35 U.S.C. §103(a). Additionally, certain sections of the specification, drawings, and abstract are objected to for various informalities.

By this amendment, claims 1-30 have been cancelled and claims 31-54 have been added. In general, the newly added claims represent subject matter previously presented in the now cancelled claims. For example, new claims 32-35 correspond to cancelled claims 1-4, respectfully, new claims 36-40 correspond to cancelled claims 7-11, respectfully, and new claims 41-54 correspond to cancelled claims 13-26, respectfully.

For the reasons set forth below, claims 31-54 are believed to be in condition for immediate allowance. Favorable reconsideration of the application in view of the following remarks, is therefore respectfully requested.

## Domestic Priority

The Office Action denied Applicant's priority claim to U.S. Provisional Patent Application Serial No. 60/240,197. In support of this denial, the Office Action states:

“The provisional application contains schematics and detailed descriptions of the HVAC system. However, it does not describe the numerous modules of the article in the computer readable medium and their features and function as claimed in Claims 1-21. It does not describe the method claimed in claims 22-30. One of ordinary skill in the art would require undue experimentation to arrive at the material claimed in the invention from the provisional application filed on October 12, 2000.” (Office Action mailed Feb. 25, 2005 page 2, section 2.)

This statement is conclusory and evidences no analysis of the applicable law and technology. Noticeably absent is any analysis regard the level of skill of “one of ordinary skill in

the art.” The statement neither evaluates what inputs those of ordinary skill in the art typically receive nor addresses what outputs those of ordinary skill in the art typically produce. Without such analysis, no assertion of a failure to comply with 35 U.S.C. §112, second paragraph, and the associated denial of Applicant’s priority claim can be properly maintained.

A proper analysis of the disclosure from Applicant’s provisional patent application, cancelled claims 1-30, new claims 32-54, the applicable law, and the applicable technology does not support denial of priority. Those of ordinary skill in the present art routinely use the inputs provided by Applicant’s provisional patent application to produce outputs such as those set forth in Applicant’s claims. Accordingly, cancelled claims 1-30 were, and new claims 31-54 are, fully supported by the disclosure of Applicant’s provisional patent application and are, therefore, entitled to its filing date.

On the subject of computer related patents, the Court of Appeals for the Federal Circuit has authoritatively stated that:

“When the challenged subject matter is a computer program that implements a claimed device or method, enablements [sic] is determined from the viewpoint of a skilled programmer using the knowledge and skill with which such a person is charged. The amount of disclosure that will enable practice of an invention that utilizes a computer program may vary according to the nature of the invention, the role of the program in carrying it out, and the complexity of the contemplated programming, all from the viewpoint of the skilled programmer.” *Northern Telecom, Inc. v. Datapoint Coro.*, 908 F.2d 931, 941 (Fed. Cir. 1990); *see also In re Sherwood*, 613 F.2d 809, 817 (CCPA 1980).

In view of this law, because Applicant’s claims relate to computer programs, “one of ordinary skill in the art” must be a “skilled programmer.” Applicant’s claims also recite systems and methods for the design of HVAC systems of potentially unlimited configurations and arrangements. Accordingly, in addition to being a skilled programmer, one of ordinary skill in the present art must also have some understanding of HVAC system design and computation.

*See WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1357-1358 (Fed. Cir. 1999) (finding enforceable a patent involving electronic gaming device where the parties stipulated that

a person possessing ordinary skill would have completed at least several college-level courses in computer science or electrical engineering, would have been employed for several years in the field of engineering, developing and designing gaming devices, and would have had some knowledge of probability theory, random numbers, and computer programming).

In the present case, as in *Northern Telecom*, “[t]he claimed invention ... is not in the details of the program writing, but in the apparatus and method whose patentability is based on the claimed combination of components or steps.” *Northern Telecom*, 908 F.2d at 941. Applicant’s novel “combinations or steps” are properly and sufficiently disclosed in Applicant’s provisional patent application to support Applicant’s priority claim.

For example, Applicant’s provisional application describes the “significant features” of the invention. It explains how “[d]ata is represented by real looking objects that are connected together and communicate data to model temperatures, flows, air flows, etc. like actual systems.” (See Prov. App. pages 8-9.) It explains the function of the “air handler schematic,” “airflow schematic,” and “hydronic schematic.” (See Prov. App. pages 8-9.) It explains how the novel calculations (e.g. “load calculation,” “head calculation,” “static pressure calculation,” etc.) are performed and continuously updated to provide “automatic summation.” (See Prov. App. pages 8-9.) It discloses the symbols and schematics that may be available on a software implementation of the invention. (See Prov. App. Figure 1-17.) It discloses the menus that may be available on a software implementation of the invention. (See Prov. App. Appendix B.) It even goes so far as to illustrate graphical, dialog boxes where the various physical and functional characteristics of the HVAC components may be defined and customized. (See Prov. App. Figure 18-22.)

These features and functions are the basis for the present invention. How they are ultimately coded into modules is within the discretion of those of ordinary skill in the art and

need not be addressed in Applicant's provisional patent application to support Applicant's priority claim.

"In assessing any computer-related invention, it must be remembered that the programming is done in a computer language. The computer language is not a conjuration of some black art, it is simply a highly structured language .... [T]he conversion of a complete thought (as expressed in English and mathematics, i.e. the known input, the desired output, the mathematical expressions needed and the methods of using those expressions) into a language a machine understands is necessarily a mere clerical function to a skilled programmer." *Northern Telecom*, 908 F.2d at 943 (emphasis added) (quoting *In re Sherwood*, 613 F.2d at 817 n. 6).

Because those of ordinary skill in the present art routinely use the inputs provided by Applicant's provisional patent application to produce outputs such as those set forth in Applicant's claims, such claims are fully supported by the disclosure of Applicant's provisional patent application and entitled to its filing date. Reconsideration is respectfully requested.

#### **Objections to the Drawings, Specification, and Abstract**

After review, Applicant finds the first four asserted inconsistencies cited in the Office Action to be unfounded. Accordingly, in such cases, no amendment has been made. However, the drawings, specification, and abstract have been amended to correct the various other informalities identified in the Office Action. Reconsideration is respectfully requested.

#### **Objections to Claims 1, 2, 8, 10, and 12-16**

The Office Action objects to claims 1, 2, 8, 10, and 12-16 for their recitation of "data structures." The Office Action asserts that the term "data structures" has a meaning different than how the term is used in these claims. By this amendment, the claims objected to for their use of "data structures" have been cancelled. However, several of the newly added claims

continue to use the term “data structures” in a similar manner. Accordingly, Applicant wishes to address the issue.

It is well established that, “a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). In view of this rule, even if Applicant had used “data structures” in a manner contrary to its ordinary meaning, it would be irrelevant. Applicant has expressly defined “data structures” to mean “executable data” (e.g., code, machine language, and the like) as well as “operational data” (e.g., temperatures, flow rates, and the like). (See Spec. Page 14, lines 12-13.) Reconsideration is respectfully requested.

**Rejection of Claims 1-4, 8-20, and 29 Under 35 U.S.C. §112, First Paragraph**

Claims 1-4, 8-20, and 29 stand rejected under 35 U.S.C. §112, first paragraph, for not describing “how an input module is configured to receive inputs, a design module is configured to operate on the inputs,” etc. By this amendment, the claims rejected for their use of “configured” have been cancelled. However, several of the newly added claims continue to use the term “configured” in a similar manner. Accordingly, Applicant wishes to address the issue.

Contrary to the assertions of the Office Action, Applicant’s specification need not teach a programmer how to program to satisfy 35 U.S.C. §112, first paragraph. As readily appreciated, there are numerous ways in which a given module may be configured to perform a particular function. Once Applicant sets forth the function of a module, one of ordinary skill in the art may “configure” the module to perform that function in any way he or she sees fit.

Again, “[t]he claimed invention ... is not in the details of the program writing, but in the apparatus and method whose patentability is based on the claimed combination of components or steps.” *Northern Telecom*, 908 F.2d at 941. “[T]he conversion of a complete thought ... into a

language a machine understands is necessarily a mere clerical function to a skilled programmer.”

*Id.*, at 943 (emphasis added). Reconsideration is respectfully requested.

#### **Rejection of Claims 1, 2, 8, 10, and 13-16 Under 35 U.S.C. §112, Second Paragraph**

Claims 1, 2, 8, 10, and 13-16 stand rejected under 35 U.S.C. §112, second paragraph, for the assertedly indefinite nature of the term “data structures of executable type.” By this amendment, the claims rejected for their use of “data structures of executable type” have been cancelled. However, several of the newly added claims continue to use the term “data structures of executable type” in a similar manner. Accordingly, Applicant wishes to address the issue.

To be indefinite, a term must have a meaning that is not clear. Applicant has defined “data structure of executable type” to mean things that can be stored on a computer readable medium and executed by a computer. (See Applicant’s Figures 1 and 2 and specification page 14, lines 12-18.) Whether a particular thing can be stored on a computer readable medium and executed by a computer is easily determined. Accordingly, the meaning of “data structure of executable type” is clear. Reconsideration is respectfully requested.

#### **Rejection of Claims 1-30 Under 35 U.S.C. §101**

Claims 1-30 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. With respect to claims 1-21, the Office Action asserts that Applicant’s use of the term “data structures” directs the claims to non-statutory subject matter. By this amendment, the claims rejected for their use of “data structures” have been cancelled. However, several of the newly added claims continue to use the term “data structures” in a similar manner. Accordingly, Applicant wishes to address the issue.

In contrast to the assertions of the Office Action, the MPEP clearly states that, “a claimed computer-readable medium encoded with a data structure<sup>1</sup> defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.” MPEP § 2106(IV)(B)(1)(a), emphasis added. Reconsideration is respectfully requested.

Claims 22-30 stand rejected under 35 U.S.C. §101 for reciting a process that is not directed to the “technological arts.” By this amendment, the claims so rejected have been cancelled. However, several of the newly added claims continue to claim similar methods. Accordingly, Applicant wishes to address the issue.

The Office Action defines “technology” as “the application of … engineering to the development of … procedures in order to enhance or improve … human efficiency in some respect.” Applicant’s method claims define procedures for improving human efficiency in designing HVAC systems. As such, they fit within the definition of technological art cited within the Office Action. Reconsideration is respectfully requested.

### **Rejections Under 35 U.S.C. §103(a)**

Claims 1-4, 13, 14, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray et al (hereinafter “Pray”). Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray and Gibino et al. (hereinafter “Gibino”). Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray, Gibino, and Littleford et al. (hereinafter “Littleford”). Claims 7-12, 15-17, and 19-21 stand

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<sup>1</sup> The MPEP defines a “data structure” as “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” Because many things, including lines of code, may be considered “data elements” that “support specific data manipulation functions,” the data structures (*e.g.* executable and operation data structures) disclosed by Application fall within this definition.

rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray and House et al. (hereinafter “House”). Claims 22-29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray, Miousheve et al. (hereinafter “Miousheve”), and House. Claims 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Aziz in view of Pray, Miousheve, House, and Littleford.

By this amendment, the claims rejected over the various combinations of Aziz, Pray, Gibino, Littleford, House, and Miousheve have been cancelled. However, several of the newly added claims continue to claim similar subject matter. Accordingly, Applicant wishes to address the issue.

In view of Applicant’s priority claim, Aziz is not prior art against Applicant’s claims. Accordingly, any rejection based on Aziz is improper and should be withdrawn.

Moreover, to establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (*See* MPEP 2143.) Neither Aziz, Pray, Gibino, Littleford, House, Miousheve, nor any combination thereof teaches or suggests all of the limitations of Applicant’s claims. Accordingly, even if Aziz were available as prior art, a rejection under 35 U.S.C. §103(a) using Aziz, Pray, Gibino, Littleford, House, Miousheve or any combination thereof would be improper.

For example, neither Aziz, Pray, Gibino, Littleford, House, Miousheve, nor any combination thereof teaches or suggests “an analysis module configured to calculate the predicted performance of a system made in accordance with the schematic HVAC system based on the performance data corresponding to each of the one or more design elements,” as required by Applicant’s claim 31. Neither Aziz, Pray, Gibino, Littleford, House, Miousheve, nor any combination thereof teaches or suggests an analysis module configured to “automatically calculate behaviors of a selected design element of the design elements based on the behavior of at least one other design element of the design elements,” as required by Applicant’s claims 32-

49. Neither Aziz, Pray, Gibino, Littleford, House, Miousheve, nor any combination thereof teaches or suggests "relying substantially exclusively on the computer to calculate a predicted performance of an actual HVAC system made in accordance with the schematic HVAC system," as required by Applicant's claims 50-54. Accordingly, reconsideration is respectfully requested.

In the event that the examiner finds any remaining impediment to the prompt allowance of any of these claims, which could be clarified in a telephone conference, the examiner is respectfully urged to initiate the same with the undersigned.

DATED this 27 day of June, 2005.

Respectfully submitted,

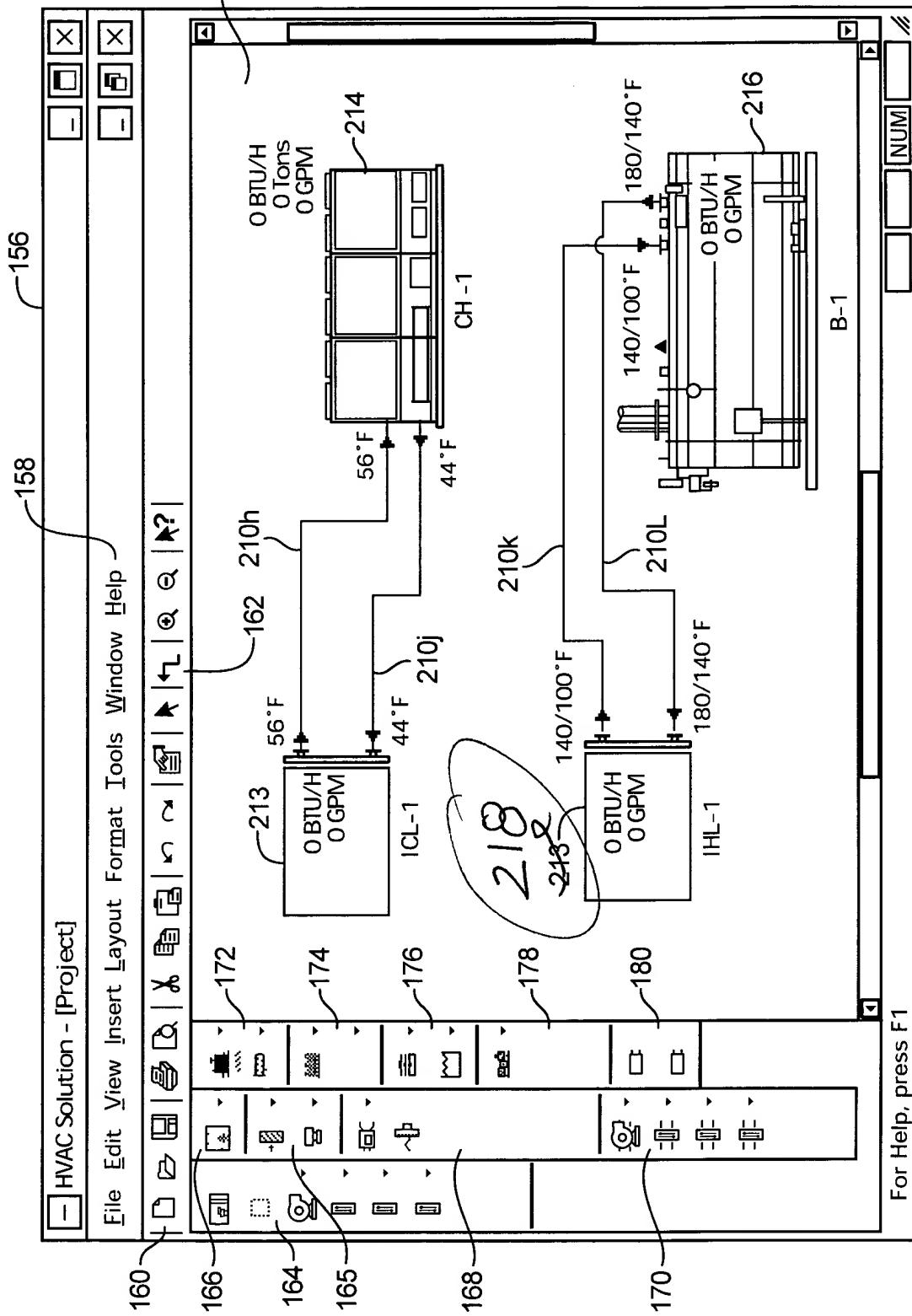


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**FIG. 6**

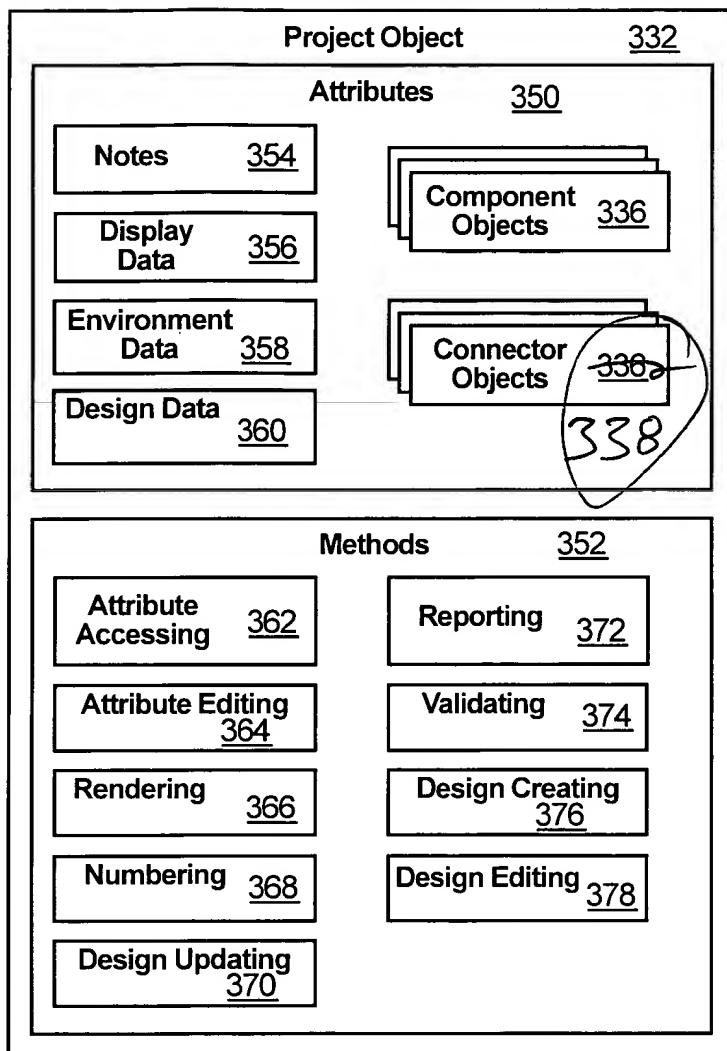


FIG. 16

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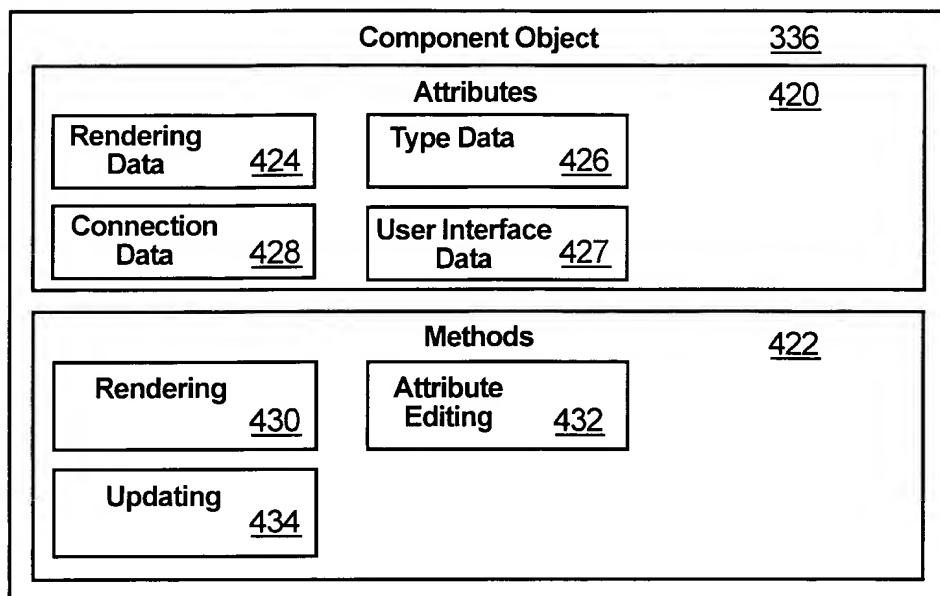


FIG. 19

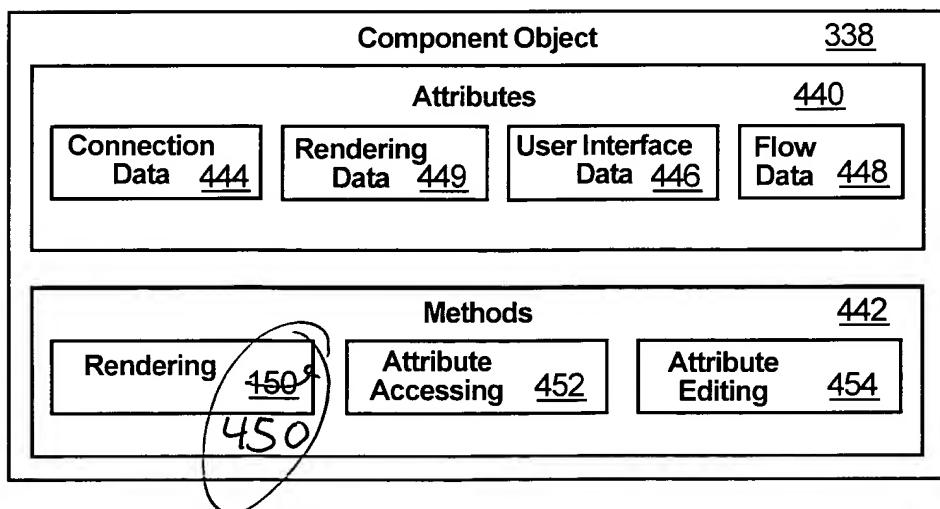


FIG. 20